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ABSTRACT

The Cleveland Reading Improvement Project attempts to provide specialized reading instruction for disadvantaged pupils in the primary grades. The project utilized the services of a reading consultant in each target school and serves children who have been identified by their classroom teachers and school principals as experiencing difficulty in mastering reading. Master Teachers and educational aides furnish individual and small group instruction on a daily basis. Other key components of the program include: the diagnosis of pupil reading needs, a wide range of alternative instructional techniques, a variety of reading materials, parental involvement, and feedback to the classroom teacher. Findings in the fourth year of the project indicate a significant improvement in the reading performance of children who participated in the program during the 1971-72 school year. A full description of the project, evaluation of the results, and conclusions and recommendations are given. The appendixes include statistical information and sample forms used in the project. Some data from the project's inception in 1969 through 1972 are also provided. (TO)

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READING IMPROVEMENT PROJECT

TITLE I EVALUATION

1971-1972

Fund 58 - Component 4

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READING IMPROVEMENT PROJECT

I. INTRODUCTION

A. Needs and Rationale

Schools serving areas where unemployment figures are highest see greater concentrations of disadvantaged children from homes where illiteracy levels and economic deprivation exist. The prime challenge for these schools is to implement instructional strategies which will enhance learning opportunities of these children in the communicative processes. Population transiency occurring throughout large urban cities is reflected in the increased number of adjustment pressures which disadvantaged children must face at a time when coping skills levels are undeveloped. The Reading Improvement Project represents an attempt to provide specialized reading instruction and support for disadvantaged pupils at a time deemed critical in their school experience-- the primary grades.

The project operates in a framework which utilizes the services of a reading consultant in each target school. It serves children who have been identified by their classroom teachers and school principals as experiencing difficulty in mastering reading. It provides master teachers and educational aides to furnish individual and small group instruction on a daily basis. The philosophy of the project emanates from the belief that the ability to read is the key to educational and vocational opportunity, which is the right of every child.

Program procedures utilize certain key components which include:

1. diagnosis of pupil reading needs
2. individual and small group instruction on a daily basis
3. wide range of alternative instructional techniques
4. variety of reading materials
5. feedback to classroom teacher
6. parental involvement
7. services of a master reading teacher
8. services of an educational assistant

B. Historical Background

The project was funded initially under an Office of Economic Opportunity grant in 1965 which provided part-time services to 65 eligible schools. Evaluation of program services indicated greater concentration rather than dispersion of services was required if an impact on reading performance were to be achieved.

With the transfer to Title I funding in February, 1967, services were focused at 20 public and five non-public schools with the highest concentrations of disadvantaged pupils. At this time, an important redirection in services involved the transfer of certain inservice components such as demonstration teaching and consultation for classroom teachers to other funding sources which provided projects tandem to the Reading Instruction Project. In keeping with the spirit of Title I legislation; activities centered primarily on services to disadvantaged children.

G. Summary of Operations

Project services during the 1971-72 school year were provided to a total of 2,167 pupils in grades one, two, and three in 30 public and seven non-public schools identified as eligible for Title I services, based on the June census. Total staff needs for the program included 34 full time consultants, 29 educational assistants in addition to administrative and clerical staff. Through efforts of the staff, program enrollees demonstrated greater average reading gains than did their controls.

Total expenditures for the project were \$691,974.00. Cost data indicate a per pupil cost of approximately \$319.32 for the project during the school year 1971-72 based on a service rate of 2,167 pupils. During that current operation period, per pupil expenditure for instruction in the elementary grades of the Cleveland Public Schools totaled \$503.77.* Approximately thirty-six per cent of total instruction time is devoted to reading instruction. Cost of the instructional time allocated to reading was approximately \$181.36 per child in these grades.

Per pupil cost of the project's instructional component** was approximately \$319.32 for the 1971-72 year. Data show that control children made an average gain of .7 units in vocabulary and .6 grade equivalent units in comprehension for an expenditure of \$181.36. This project increased progress of experimental pupils by an average of 1.6 units in vocabulary and 1.0 units in comprehension. Consequently,

* General Fund - Per Pupil Educational Expenditures

**Charges to Account #200, Instruction, plus fixed charges

the additional increment of .9 and .4 grade equivalent units in each area cost \$319.32. This finding suggests that for each unit of increment in comprehension, cost will be approximately \$79.83 and for vocabulary \$35.48.

The program opened with service to 31 public schools. One school was lost to the program during the year due to the resignation of the consultant. The project was unable to replace this consultant due to circumstances beyond its control.

D. Questions to be Answered by Evaluation

This evaluation focuses on the services of the Reading Instruction Project provided during the school year 1971-72. It draws substantially on information from the 1969-72 reports to provide study of the longitudinal effect of the project.

The evaluation considered the following questions related to the assessment of the effectiveness of services provided by this project:

1. Does the reading performance of children receiving consultant service differ from children not receiving consultant service in terms of standardized test results, teacher rating of various aspects of classroom reading performance, final mark in reading and attendance?
2. How many pupils improved their reading skill so that they could be considered to be performing at an appropriate level?
3. What were teachers' perceptions of pupils progress?
4. What were parents' perceptions of pupils progress?
5. How does the current progress of pupils who received service in 1969-71 compare with those who did not receive service?
6. How did teachers view the project at its present stage of operation?

II. HIGHLIGHTS OF FINDINGS

A. Summary of Key Findings

Findings indicate that the services of Reading Improvement Program during 1971-72 produced a significant improvement of the reading performance of children who participated in the program. Cost data for the project reveal a per pupil expenditure of \$319.32 during the school term 1971-72. The results from two designs were used in the analysis of data.

Table I

Gates MacGinitie Reading Tests
Primary A, Form 1
Primary B and C, Form 2

Design 1: Comparison of posttest scores for experimental and control children in grades 1, 2 and 3

<u>V O C A B U L A R Y</u>			
<u>Grade</u>	<u>Experimental</u>	<u>Control</u>	<u>Advantage</u>
1	1.9	1.5	Experimental
2	3.1	2.4	Experimental
3	3.9	2.9	Experimental

<u>C O M P R E H E N S I O N</u>			
<u>Grade</u>	<u>Experimental</u>	<u>Control</u>	<u>Advantage</u>
1	1.8	1.6	None
2	2.6	2.3	Experimental
3	3.3	2.7	Experimental

(Raw scores were converted to grade equivalent units for the purpose of this table.)

1. Children receiving consultant services in grade 2 and 3 reflected superior performance in vocabulary and comprehension in comparison with control pupils. Experimental first graders exhibited a significant advantage over controls in post vocabulary performance. No significant advantage was observable between the post performances of experimental and control pupils in comprehension at first grade level.

Table II

Gates MacGinitie Reading Tests
Primary B and C, Form 2

Design 2: Comparison of gain scores for experimental and control pupils in grades 2 and 3

V O C A B U L A R Y		
<u>Grade</u>	<u>Experimental</u>	<u>Control</u>
2	1.60	.85
3	1.60	.60
Total Group	1.60	.73

C O M P R E H E N S I O N		
<u>Grade</u>	<u>Experimental</u>	<u>Control</u>
2	1.00	.70
3	1.00	.55
Total Group	1.00	.63

(Raw scores were converted to grade equivalent units for the purpose of this table.)

2. Average gains for experimental pupils exceeded those for control pupils in both vocabulary and comprehension. Results show that experimental pupils demonstrated an average of two months gain in vocabulary for one month of instruction based on an eight month service period. This reflected a gain performance doubling the typical expected performance of one month of gain for one month

of service. Controls reflected slightly less than one month's gain in vocabulary for one month of classroom service without program assistance. Experimental pupils reflected one and one quarter month's gain for one month of service while controls reflected three fourths of a month's gain for one month of service in comprehension.

3. Greatest impact was observed at grade three where comprehension performance and use of classroom materials were at the highest level for experimental pupils. (This was a divergence from the pattern found in the 1969-70, 1970-71 study where reading marks were highest.)
4. About 48 per cent of second grade experimental pupils upgraded their reading performance so that they placed within a half-year or above their reading expectancies, as set by the Bond-Tinker formula. About 38 per cent of third grade pupils in the experimental group achieved this status. (1970 results reflected 49 per cent and 38 per cent rate of improvement in these grades. The 1971 study revealed 49 per cent and 50 per cent standing at these grade levels.)
5. Classroom teachers rated two out of five pupils as being able to handle the usual reading materials for the grade level "most of the time". Teachers of control children rated one out of three pupils as being able to handle the usual materials from "sometimes" to "not at all".
6. Teachers viewed the strengths of the program as including increased confidence, better self-image, greater opportunities for attention to individual pupil reading needs and improved word attack skills.
7. Approximately 80 per cent of the parents rated the program as helping their child "very much".
8. Parents valued individual attention to reading problems. They reported increased desire to read, enthusiasm in displaying oral reading at home. Project records show a total of 2,044 parent contacts (group meetings, individual contacts, parental classroom visits and home visits during the school year 1971-1972.
9. Longitudinal studies revealed that samples of prior program participants regressed from their stanine standings at third grade level as they moved through the upper elementary grades. No significant differences were observed between the performances of either experimental or control pupils in the samples studied.

B. Implications and Recommendations

The Reading Improvement Program has been efficiently implemented and appears to be accomplishing its stated objective.

Data from the first grade reflected significant differences between experimental and control groups in vocabulary. The finding of no significant difference in comprehension was also evident in the 1970-71 evaluation and indicates the need for a more critical examination of the pupil profile Kindergarten record card for first grade pupils prior to referral.

Boys, whether experimental or control, performed better on vocabulary tests, and showed better attitudes toward reading in general. Girls mirrored superior performances in comprehension, participation in reading activities, completion of assigned reading tasks, reflected greater self-confidence, independence of word attack, use of classroom materials and received better teacher marks. These findings generally support patterns of difference between performances of boys and girls in mastering reading. These patterns may reflect different rates of development. The need to understand the differences in rate of developmental growth between boys and girls must be explored and provided for within the classrooms through teacher in-service. The project has implemented its attack on this problem with the use of materials oriented equally in interest to boys and girls. In-service to staff in those aspects of child development deemed appropriate to reading needs of pupils with reading deficiencies was an approach deemed necessary.

Parents, teachers and principals have recommended that the successful reading experiences of the primary children be ex-

tended to their offspring in the elementary grades. It has been demonstrated that one out of two pupils in grades two and three who placed at an appropriate reading level, tend to remain below average in reading performances of pupils in these groups. As they progress through the later grades without structured reading remediation efforts, growth effects in reading dissipate. Current and prior year reports from principals, parents and teachers in schools where the program has operated indicate feelings that services to pupils in grades four, five and six should be provided.

It is recommended that the services of the Reading Improvement Program be continued to pupils in the Cleveland schools. It is suggested, based upon evaluation findings, parental opinions, and interviews of school personnel that the project might wish to explore;

- . a review of the criteria for selection of first grade pupils
- . greater emphasis on reading comprehension
- . improved communication with teachers of pupils participating in the program to accomplish greater understanding of the program, its methods of pupil selection and feedback.

It is further recommended that the Reading Instruction Program consider utilization of the experiential learnings gleaned from the Reading Improvement Primary program as a base for the development of a program of services for fourth grade pupils.

III. PROJECT DESCRIPTION

A. Participant Characteristics

Enrollment data for the project indicated that a total of 2167 pupils participated in the program. Pupils were distributed across the following grade levels:

TABLE III
DISTRIBUTION OF PUPILS BY GRADES *
READING IMPROVEMENT PROGRAM
1971-1972

Grade	Boys	Public Girls	Total	Boys	Non-Public Girls	Total
Grade 1	206	210	416	18	19	37
Grade 2	426	361	787	32	28	60
Grade 3	<u>410</u>	<u>417</u>	<u>827</u>	<u>20</u>	<u>20</u>	<u>40</u>
Total	1042	988	2030	40	67	137

*Experimental pupils

Approximately 51 per cent of the pupils were boys. Enrollment was distributed between three grade levels, with approximately 40 per cent being third graders, 22 per cent first graders, and 43 per cent second graders.

Average scholastic aptitude scores for the pupil groups, which were obtained from the Lorge-Thorndike Intelligence Scale, placed the groups in the below average range. Average P.L.R. scores included:

TABLE IV
RESULTS OF SCHOLASTIC APTITUDE TESTS
Lorge-Thorndike Intelligence Tests
Level 1 Form A Grade 1
Level 2 Form A Grades 2 and 3

Group	Boys		Girls		Summary	
	Exp.	Control	Exp.	Control	Exp.	Control
Grade 1	92.24	88.10	87.72	80.81	89.98	84.46
Grade 2	94.23	96.21	100.12	98.00	97.18	97.11
Grade 3	89.36	87.70	92.73	91.40	91.05	89.55

Median ages for the respective grades exceeded typical median ages by three to six months. Chronological age distributions for each grade were:

TABLE V
Median Chronological Ages by Grade
1971-72

Group	Range of Ages*		Median Age	
	Experimental	Control	Experimental	Control
Grade 1	6-0 - 8-6	6-0 - 7-10	6-9	6-9
Grade 2	7-0 - 9-7	6-9 - 9-2	7-9	7-8
Grade 3	7-6 - 10-3	7-11- 10-6	9-1	9-0

*years and months as of September, 1970

Project records were checked to determine the pattern of criteria used by principals and teachers for identification of

pupils for referral to the program. The major criterion used either singly or in combination with other criteria appeared to be judgment of teacher and principal after observation of classroom performance. The incidence of referral* is summarized as follows:

TABLE VI
Reason for Referral

Referral reason*	Grade 1	Grade 2	Grade 3	TOTAL
Grade retardation	111	78	140	329
Performance, below expectations, on standardized tests	45	19	32	96
Cumulative record of poor school achievement	82	112	194	388
Below average performance on a standardized scholastic aptitude test	23	28	42	93
Judgment of teacher and principal after observation of classroom performance	118	190	235	543

*duplicated counts

B. PROJECT OPERATIONS

The project began its 1971-72 operation at 31 elementary schools. During the year, five additional schools entered the program. At the end of the school year, the program was rendering service to pupils in 30 public and seven non-public elementary schools utilizing a staff of 53 persons. Guided by the educational program manager, staff included a Staff Assistant, 33 consultants and 29 educational assistants.

Service to one school was lost due to the resignation of the consultant.

Pupils were identified on the basis of program criteria by teachers and principals of eligible target city schools. Project administrative staff aided by the Division of Research randomly assigned pupils to service groups from the referral lists. The numbers of children identified necessitated an assignment procedure which provided all pupils with an equal opportunity for service. In addition, random assignment established control of extraneous variables other than reading instruction which might account for changes in reading performance of the children. Children not randomly selected, but recommended, were placed on a waiting list for future assignment in the event experimental children moved from the school attendance area. As places became available, children were assigned from the control waiting list. Random selection procedures provided a fair means of allocating services inasmuch as more children were identified for services than could have been served with program resources.

Enrollment records for the program show that 2,167 pupils had been served as of June 1, 1972. The larger enrollee increases occurred in October (three per cent), November (two per cent) and February (one per cent). In addition, 330 pupils who were referred by their teachers and processed for service in September remained on the waiting list in June, 1972. In accordance with the design of this program, pupils remaining on the waiting list are the project's controls.

TABLE VII

Participant Entries by Month 1971-1972

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Total
Grade 1	415	12	8	4	5	8	1		453
Grade 2	774	30	12	4	3	15	7	2	847
Grade 3	<u>788</u>	<u>25</u>	<u>19</u>	<u>10</u>	<u>10</u>	<u>6</u>	<u>8</u>	<u>1</u>	<u>867</u>
Totals	1977	67	39	18	18	29	16	3	2167

Pupils placed in the program were scheduled in cadres of six to ten for 50 minutes of daily instruction. Pupils received an average of four and one-half hours of instruction each week. Appendix I contains a summary of target schools involved and number of pupils on the service list ending June, 1972. Of the 2167 pupils served during the school year, 137 were enrolled in non-public schools. Reading consultants met a total of pupils ranging from 36 to 50 each day.

Consultants attempted to gear daily instruction to needs of pupils in the particular group. The general plan followed by consultants usually involved four types of pupil activity:

1. warm up sessions reinforcing previously taught skills
2. oral and silent reading opportunities
3. skill presentation sessions
4. individual development sessions providing one-to-one tutoring

In addition, conference time for motivation and feedback of progress to pupil was a part of the daily schedule.

Consultants varied activities to keep pupil interest high and to supplement pupil's regular classroom instruction in reading. Materials of high interest level were used which were not available in the regular program. Consultants designed reading games, charts, worksheets, illustrative materials in addition to utilizing the latest commercial materials and media.

Each consultant attempted to employ instructional strategies which would provide children successful experiences. Ongoing feedback to children was utilized to make them aware of progress. Generally, instruction sought to improve vocabulary, skill in following directions, mastery of sight words, grasp of vocabulary skills, and techniques in selecting main ideas augmented with emphasis on critical thinking.

In all target elementary schools served, sessions were scheduled in a room assigned to the consultant. The room was made available as a reading resource center for primary grade teachers. Educational aides assisted consultants in record keeping, clerical tasks, and tutorial activities as well as supervising the arrival and dismissal of pupils in the reading resource center.

Records of 2,167 pupils receiving service as of June 1972 show 723 parental classroom visits, 834 individual conferences and an attendance of 465 parents at group meetings. In addition, a total of 22 home visits was made by consultants.

Estimated total unduplicated involvement of parents was 2,044 in these activities. Consultants discussed pupil strengths and weaknesses with parents and recommended procedures which might be adapted for home use in reinforcement of the reading program and encouragement of pupil progress. Meetings featured demonstrations of reading techniques with children in which parents could observe their own children. Consultants shared suggestions for reading activities with parents and outlined the availability of library materials in the school and community.

The staff spent 1,230 hours in in-service activities ranging from local workshops to national conventions and reading institutes. A total of 70 staff members completed 740 hours involving teacher and teacher aide training while 280 hours were utilized in workshops.

Interview Survey

Near the end of the 1971-1972 school year, the services of an independent research group were obtained to interview a sample of teachers and principals of schools in which Title I programs were operating. The results as summarized reflected enthusiastic endorsement by the great majority of teachers and principals in the sample. Felt needs included:

- . increased teacher-consultant communication and coordination
- . more involvement of parents of children

Teachers expressed concern over the selection of pupils for involvement in this program. Interviewees stated that the participants should be selected by the classroom teachers.

In addition, respondents recommended an increased number of consultants to ensure that all the children who need the project's assistance could receive the service. A copy of the report is filed in the Division of Research and Development.

IV. EVALUATION

A. Basic Design

The evaluation plan attempted to assess change in reading performance of pupils receiving program services and to compare this change with that of control pupils.

An analysis was designed involving changes in reading performance of experimental and control pupils. Design for the analysis followed a 2 x 3 x 3 model involving factors of sex, grade, and treatment. Multivariate analysis of covariance was applied to data.

The sample numbers (a total of 548) involved in the analysis at the three grade levels is summarized below:

TABLE VIII

Sample Population By Grade

Grade	Group	Experimental	Control	Total
1	Boys	33	29	62
	Girls	47	16	63
2	Boys	64	47	111
	Girls	51	43	94
3	Boys	55	53	108
	Girls	<u>62</u>	<u>48</u>	<u>110</u>
Total		312	236	548

Data used for the multivariate analysis included scores on standardized tests of word meaning and paragraph meaning with covariates of P.L.R. scores and attendance.

Data used for the multivariate analyses included:

- . covariates: P.L.R. scores
attendance
- . dependent variables:
 - vocabulary test score
 - comprehension test score
 - rating on use of classroom reading materials
 - rank in class in terms of overall reading performance
 - final mark in reading

Multivariate analysis of covariance was considered appropriate for this evaluation where measurements of several variables were obtained from the same pupil groups in disproportionate subclass numbers. This approach takes into account dependencies existing between these variables.

It deals with correlations between variables, uses a single probability statement applicable to all variables jointly, and is based upon a known exact sampling distribution from which the required probabilities can be obtained. Differences between treatment effects can be inspected to determine the direction and relative size of effect on each dependent variable. After test of main effects of the variables is accomplished, step-down tests allow for investigation of dependent variables in an ordering chosen by the investigator to determine effects of more critical variables. Univariate procedures would not deal with the correlations between variables nor produce statistically independent tests.

An effort was made to obtain observation of pupil reading performance from the standpoint of the pupils' classroom teachers. Classroom performance information in the form of

reading marks, use of classroom reading materials, and rank in classroom was obtained for 354 experimental and control pupils.

A second phase of the evaluation of changes in pupil reading performance involved an individual-vs.-self comparison whereby pupil gain was measured against the pupil's reading expectancy. An objective dimension was introduced in the form of a reading expectancy, as computed by the Bond-Tinker formula, to determine pupil progress toward a reading performance level relevant to the pupil's scholastic strength.

A third phase of the evaluation centered on progress of previously served pupils as described by reading test scores obtained through the city-wide testing program.

Parents were requested to complete questionnaires which were returned to the Division of Research and Development by mail. A total of 129 replies was received. This represented a response from 24 per cent of parents of pupils in the evaluation sample.

B. Main Findings

As established by the intent of the project, change in reading performance was compared for pupils who had received services of the reading consultants and those pupils who had been identified for service but not selected by random assignment procedures employed in the program (control).

Does the reading performance of children receiving consultant service differ from children not receiving consultant service in terms of standardized test results, teacher rating of classroom performance, and final reading mark?

Certain comparisons were considered essential to determining successful attainment of program goals. Multivariate analysis

facilitated comparison of performance of the experimental and control groups in terms of these contrasts:

1. experimental versus control
2. boys versus girls
3. grade levels
4. interactions between factors

Results in which significant differences were noted are discussed below. Significant results were obtained in two of the twelve contrasts attempted.

a. Experimental vs. Control Performance

1. Experimental pupils performed significantly higher than control pupils on tests of vocabulary and comprehension.

A multivariate F-ratio of 17.9070 comparing experimental pupils with controls, indicates a statistically significant difference at the .0001 level of probability. In the presence of this significant multivariate F-ratio, the following univariate F-ratios may be interpreted:

- . 133.4560 in vocabulary, probability level of .0001
- . 62.1382 in comprehension, probability level of .0001

Inspection of the "least squares estimates" which are statistical indicators representing differences between groups compared, indicates superior performance of the experimental pupils in vocabulary and comprehension.

b. Comparison of Performance at Grades One, Two and Three

1. Grade three had superior performance in comprehension whether in experimental or control groups in comparison with grade one.

A multivariate F-ratio of 4.1144 shows a statistically significant difference beyond the .0001 level of probability exists.

The following univariate F-ratios may then be interpreted:

1. 18.0841 in comprehension, probability level of .0001
2. The advantage of superior comprehension performance in grade three was also observed in a study of grade two minus grade three.

c. Interactions between Sex, Grade and Treatment

No significant differences appeared between boys and girls who received the treatment at any grade level. It is to be recognized that the range of talent¹ restriction is one important factor for consideration in interpreting the correlation coefficient finding between two variables. It was evident that within the sample, some teachers gave substantial weighting to use of classroom materials in relation to final reading marks. The positive correlation between use of classroom materials and teacher marks was .4178. A highly representative positive correlation was reflected in the use of classroom materials and attained scores in vocabulary and comprehension. The correlations were .4901 and .5056 respectively.

Data obtained on the 1969 evaluation indicated that while teacher ratings generally were correlated (a range of .135 to .587 was observed between ratings), they were inversely related to results on standardized tests of vocabulary and comprehension. The strongest negative correlations in the data were observed between final reading mark and scores on these tests (-.47 and -.41 respectively). The 1970 data indicates a dramatic change in correlations between vocabulary and comprehension test scores and reading mark,

¹Edward W. Minium. Statistical Reasoning in Psychology and Education. New York. John Wiley and Sons, Inc. 1970. Pp. 161 - 207.

rating of the use of reading materials in the classroom, and classroom rank in reading. The range of correlations were .389 to .468.

The 1971 study reflects a superiority of performance on the part of experimental pupils in terms of performance on vocabulary and comprehension tests as correlated with P.L.R. and attendance. The 1972 study reflects the same pattern with correlations ranging from .1236 to .5518. The finding supports the previously reported correlation with the removal of the two covariates P.L.R. and attendance. For purposes of interpretation it should be considered that variables of attendance and scholastic aptitude were not the prime considerators of teachers in assigning marks. It is further interpreted that use of classroom materials is strongly reflected in teacher assessment of pupil performances in vocabulary and comprehension. This finding is substantiated by the correlation of .4450 between teacher marks and use of classroom materials. Correlations are summarized in Appendix VIII.

Comparison of results from 1968-69, 1969-70 and 1971 indicates a similar superiority of experimental pupils in the three samples in terms of performance on vocabulary and comprehension tests. Boys obtained higher reading marks in the 1968 analysis, while girls received higher marks in the 1969 and 1970-71 study. The statistically significant differences obtained involving contrasts between experimental and control pupils, boys and girls in grades one, two and three in the 1971-72 study as part of a longitudinal assessment are presented in Table IX.

TABLE IX
OBTAINED ADVANTAGES SEX, GRADE, EXPERIMENTAL VS. CONTROL
1968-1972

Variable	1968-69 Evaluation*	1969-70 Evaluation*	1970-71 Evaluation*	1971-72 Evaluation*
Vocabulary	Experimental Group	Experimental Group Experimental I Group	Experimental Group Girls Grade 1	Experimental Group Girls Grade 3
Comprehension	Experimental Group Grade 3	Experimental Group Experimental I Group Girls Grade 3	Experimental Group Girls Grade 1	Experimental Group Girls Grade 3
Mark	Boys Grade 3	Girls	No Significant Difference	No Significant Difference
Rank	Control Group Grade 3	No Significant Difference	Experimental Group Girls	No Significant Difference

*Indicates group holding the advantage

Appendix II summarizes F-ratios and univariate F-ratios.

Patterns of final reading marks assigned by classroom teachers indicate relatively few differences between the groups. Within experimental and control groups teachers assigned the highest percentage of grades as "satisfactory" (S).

It was of interest to determine grade equivalent levels for the raw scores obtained by the experimental and control pupils. Grade equivalent data was drawn from norms published in the manual for the Gates MacGinitie series.

Comparison of the standings indicate:

1. Grade Three

Greatest difference was observed in favor of experimental girls where level of performance was 1.1 grade equivalent units higher than the control group (4.0 vs. 2.9) in vocabulary.

In comprehension, a .7 grade equivalent advantage was observed in favor of experimental girls (3.4 vs. 2.7).

Experimental boys reflected a .9 and .5 advantage in comprehension, respectively, when compared to their peers in the control group.

2. Grade Two

Experimental boys and girls reflected an advantage over control pupils at this level of .7 grade equivalent units in vocabulary and .3 units in comprehension.

Achieved vocabulary scores at grade 2 level revealed that experimental boys accrued an .8 grade equivalent unit advantage over the controls (3.1 vs. 2.3). Experimental girls held a .6 unit advantage over control girls (3.1-2.5).

In comprehension the advantage between experimental and control boys and girls was .4 and .2 respectively. Experimental boys achieved a .4 unit advantage (2.6 vs. 2.2). Experimental girls reflected the .2 advantage over controls (2.6 vs. 2.4).

3. Grade I

The advantage in achieved grade equivalent units of .6 in vocabulary was reflected in favor of experimental boys in the contrast of 2.0 vs. 1.4 experimental and control. Experimental girls held a .2 unit advantage over control girls (1.7 vs. 1.5).

Differences in comprehension levels were minimal. Experimental boys reflected a .2 grade equivalent advantage over controls and girls a difference of .1 unit. Contrasts were 1.8 vs. 1.6 (boys, experimental vs. control) and 1.7 vs. 1.6 (girls, experimental and control).

Table X mirrors the average final grade equivalent scores obtained by experimental and control groups in grades one, two and three.

Table XI reflects the combined means of raw scores with interpreted grade equivalent scores based on vocabulary and comprehension norms of the appropriate Gates-MacGinitie tests.

TABLE X

Average Grade Equivalent of Posttest Scores
 Gates MacGinitie Reading Tests
 Primary A, B and C
 Form 2
 Grades 1, 2 and 3
 1971-1972

Grade	Sex	Vocabulary		Comprehension	
		Experimental	Control	Experimental	Control
1	Boys	2.0	1.4	1.8	1.6
2		3.1	2.3	2.6	2.2
3		3.7	2.8	3.1	2.6
1	Girls	1.7	1.5	1.7	1.6
2		3.1	2.5	2.6	2.4
3		4.0	2.9	3.4	2.7

TABLE XI
Grade Equivalent of Combined Means
of Raw Scores
Grades 1, 2, and 3
Gates-MacGinitie Primary Reading
Tests, Primary A¹, B², and C³
1971-1972

Grade	Sex	Treatment	Vocabulary		Comprehension	
			Mean*	Grade Equivalent	Mean*	Grade Equivalent
1	Boys	E	35.52	2.0	19.15	1.8
		C	25.03	1.4	15.45	1.6
	Girls	E	29.51	1.7	17.79	1.7
		C	23.69	1.5	14.63	1.6
2	Boys	E	34.61	3.1	21.13	2.6
		C	26.32	2.3	16.04	2.2
	Girls	E	35.24	3.1	21.41	2.6
		C	28.37	2.5	17.60	2.4
3	Boys	E	33.47	3.7	24.11	3.1
		C	24.72	2.8	19.34	2.6
	Girls	E	35.53	4.0	27.05	3.4
		C	25.58	2.9	20.19	2.7

*Posttest Raw Score Means

In order to better present information on progress made during the 1971-72 service period, average grade equivalent scores on the pre- and post-program tests were charted for grades two and three, based on raw test scores, pre and post. Table XII presents the derived data.

The ranges of gain in grade equivalent units in vocabulary were 1.6 for experimental pupils in grade two and 1.6 in grade three. Comprehension grade equivalent gain scores 1.0 (grade two) and 1.0 in grade three were reflected. Tables XII-A and XII-B summarize these findings.

Reading Expectancy Comparison

A second question of interest was:

How many pupils improved their reading skill so that they could be considered to be performing at an appropriate level?

Reading expectancies were determined for experimental pupils by the Bond-Tinker formula on a before and after service basis. The observed reading level for pupils was reported in the form of a grade equivalent score for the Comprehension sub-test of the Gates-MacGinitie Reading Test. The criterion for assessment was set as the appropriate level of functioning which was considered to be within a half-year in terms of a grade placement score of the pupils' reading expectancies.

Comparison of grade equivalent scores in comprehension with reading expectancies indicated that 48 per cent of second grade pupils served in the program during the 1971-1972 school year placed within a half year or above their reading expectancies. At least thirty-eight per cent of third grade pupils achieved

TABLE XII

Reading Improvement
 Pre-Posttest Grade Equivalent Averages
 Gates MacGinitie Reading Tests
 1971-1972
 Primary B and C
 Form 1 (Pre-test) Form 2 (Posttest)
 Grades 2 and 3

Grade	VOCABULARY			COMPREHENSION					
	Pre	Post	Gain	Pre	Post	Gain	Pre	Post	Gain
2	1.50	3.10	1.60	1.55	2.40	.85	1.60	2.60	1.00
							1.60	2.30	.70
3	2.30	3.90	1.60	2.25	2.85	.60	2.25	3.25	1.00
							2.10	2.65	.55

TABLE XII-A

Reading Improvement
Pre-Posttest
Grade Equivalents of Raw Scores
Gates MacCinitie Reading Tests
Primary B Grade 2
Primary C Grade 3
1971-1972

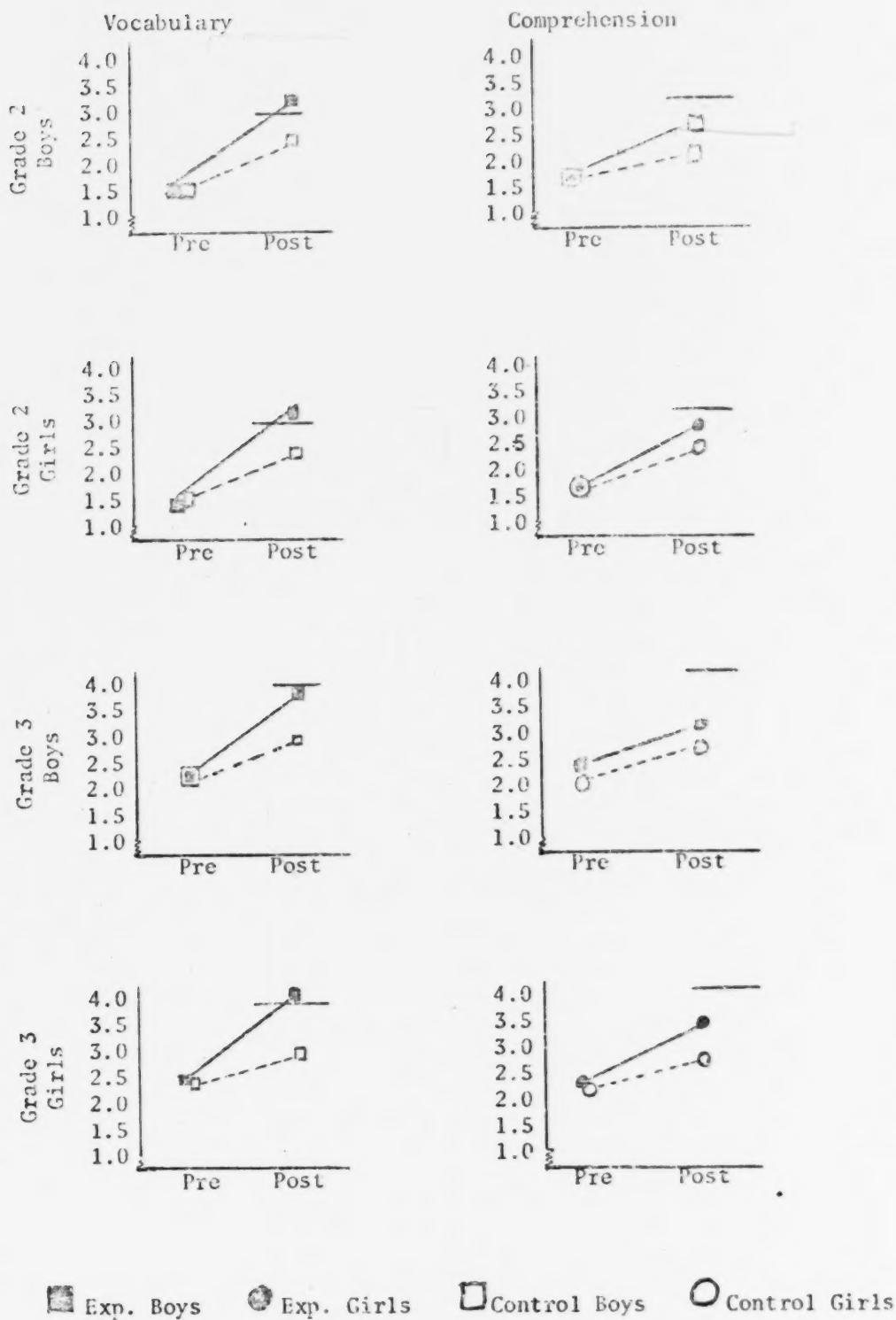
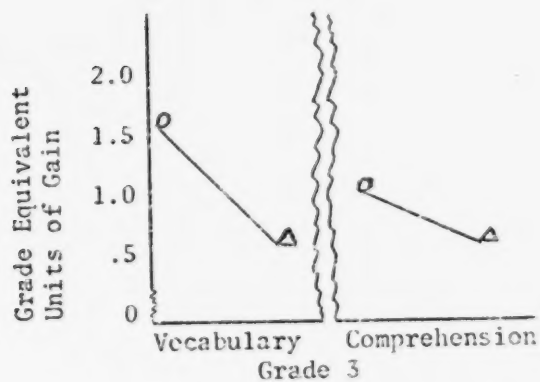
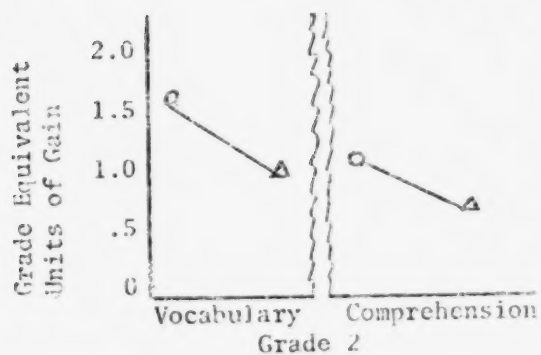


TABLE XII-B

Comparison of Grade Equivalent Gain Units
 Grades 2 and 3
 Gates MacGinitie Reading Tests
 Primary B and C
 Form 1 (Pre-test) Form 2 (Post-test)
 1971-1972

Experimental vs. Control



○ Experimental
 Δ Control

this level. This information may be related to the results obtained in prior years' evaluations which reflected percentages of gain as shown in Tables XIII-a and XIII-b. These tables show percentage changes from pre-program to post-program differences between performance levels in comprehension and reading expectancies for 1968-1972 samples.

Because reading expectancies calculated in the above method provide estimates that are startlingly close to observed reading averages for various levels of scholastic aptitude, it was considered that children approaching tolerable differences (in these cases .5 grade equivalent score units) between performance levels and expectancies can be described as having made appropriate improvement.¹

Examination of individual school records in narrowing the discrepancies between performance levels and reading expectancies indicates that ten schools showed a substantial increase in the number of pupils reaching an appropriate performance level in reading. One school showed no change, while nine schools reflected a decrease in the number of pupils performing below their expectancies. This pattern of decrease in the nine schools may indicate that consideration should be given to closer scrutiny of reasons of referral for some pupils. The major reason for referral proved to be teacher's judgment of classroom performance. Inasmuch as this reason is dependent upon more subjective than

¹Guy L. Bond and Miles A. Tinker, Reading Difficulties: Their Diagnosis and Correction, New York: Appleton-Century-Crofts, 1967.

TABLE XIII-a

Percentage of Pupils - Various Performance
Levels Compared With Reading Expectancies
1969, 1970, 1971 and 1972

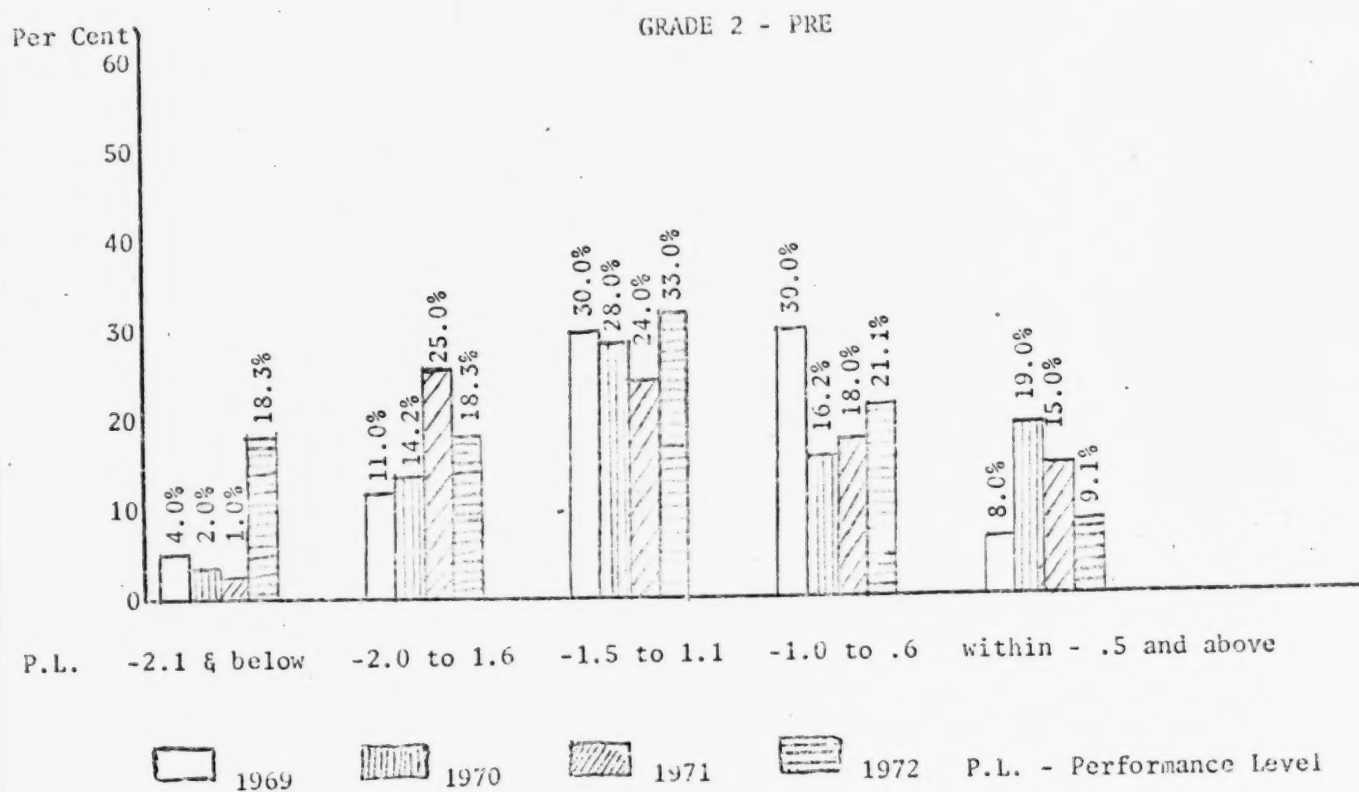
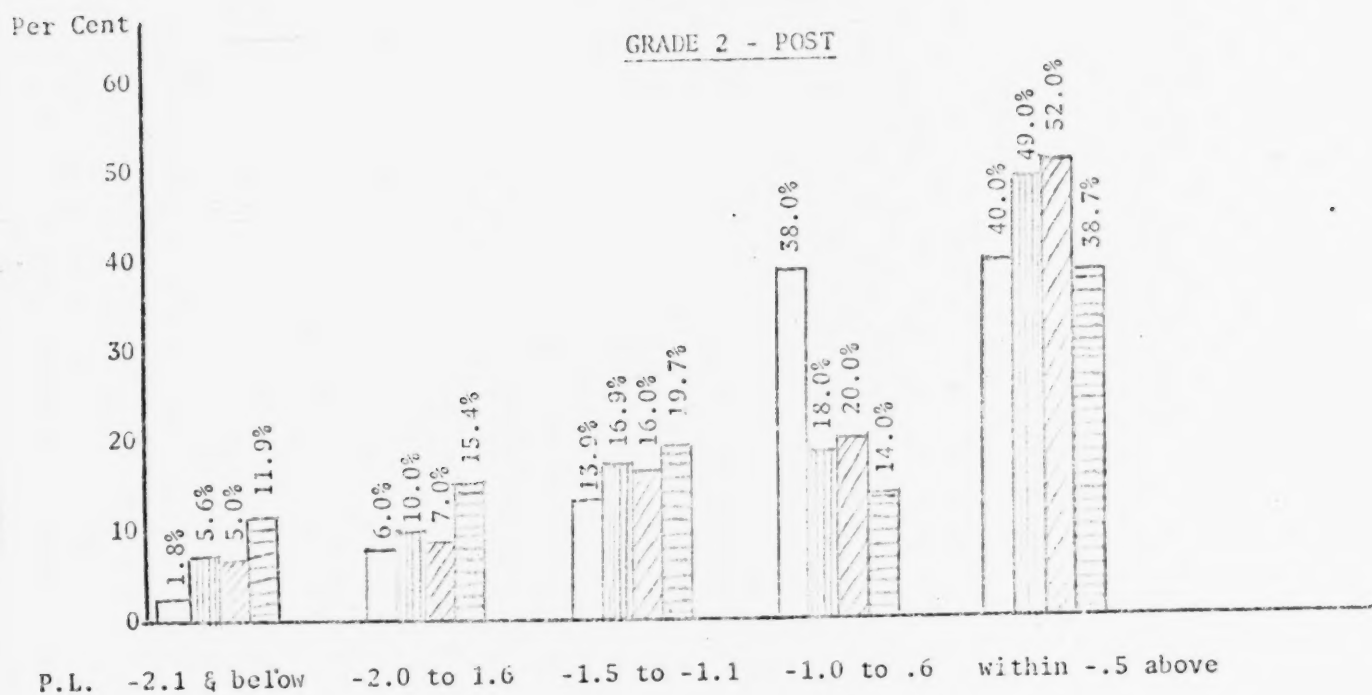
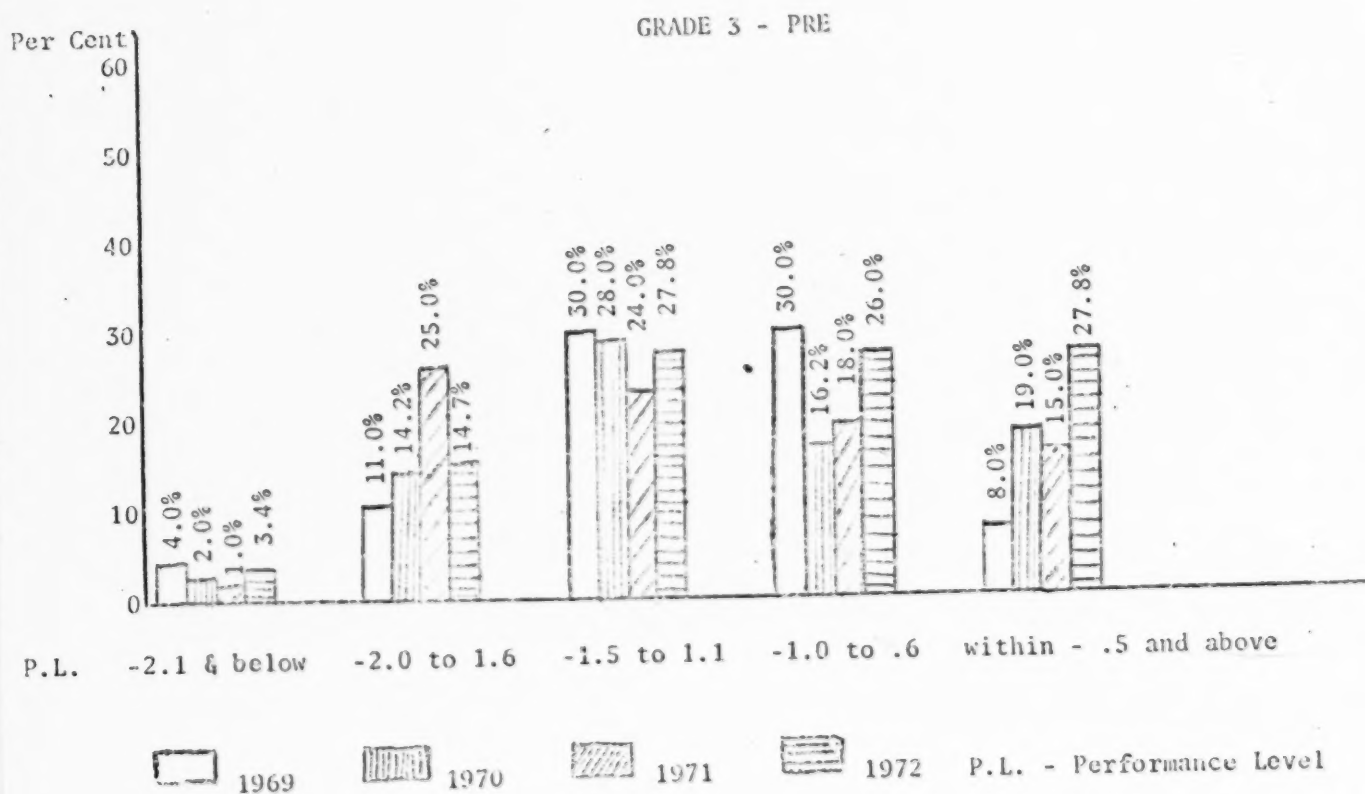
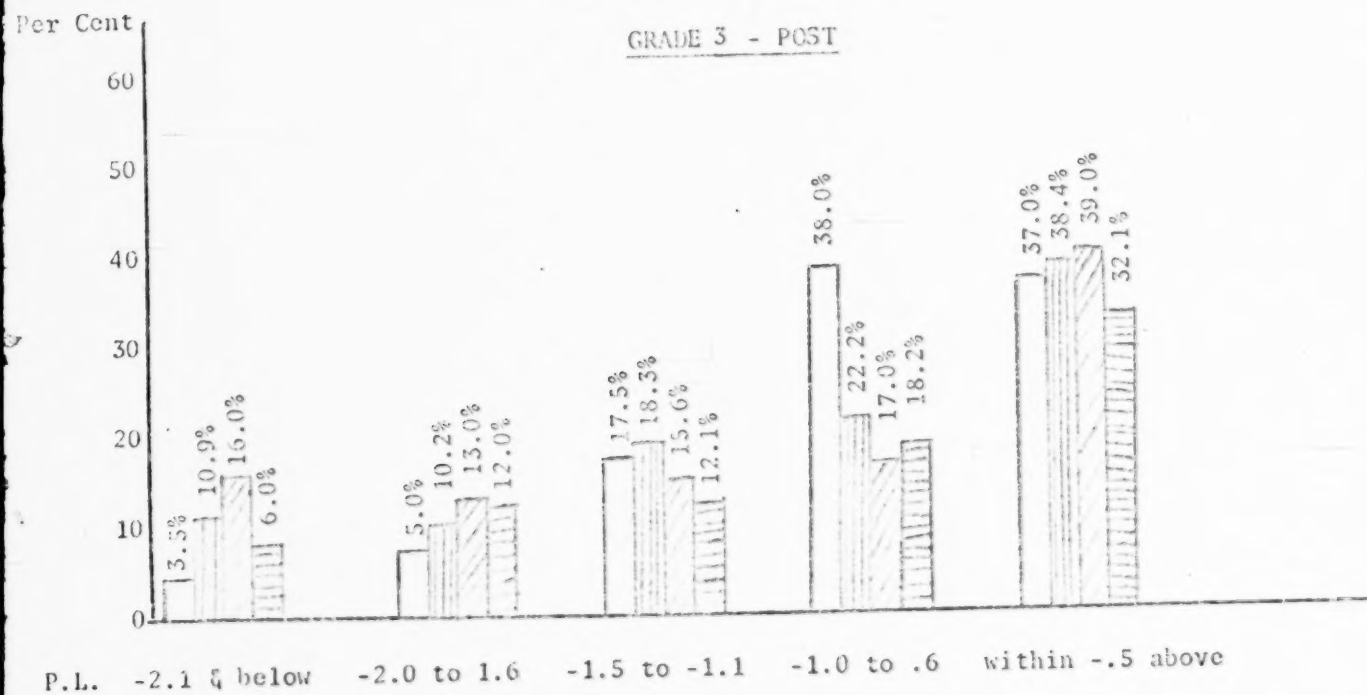


TABLE XIII-b

Percentage of Pupils - Various Performance
Levels Compared With Reading Expectancies
1969, 1970, 1971 and 1972



objective elements related to staff judgment, some consideration should be given to whether or not pupils are performing at their anticipated reading expectancy levels when assignment to the referral list is made. It should also be recognized that reading expectancy is influenced by weak performance on the scholastic aptitude instrument used in the formula. The Bond-Tinker formula however, has been demonstrated as "overpredicting" performance for pupils at the lower end of the scholastic aptitude spectrum. Further study should be made of the relationship of the formula and performance in terms of various reading skills in the classroom. The formula provides another objective dimension to be used with staff judgment in identifying pupils for service. Appendices III & IV summarize the pre- and post-program status of pupils receiving service in terms of the comparison of reading performance and reading expectancy.

Teachers' Perceptions of Progress

Another question of interest in the assessment of pupil progress involved the question:

What were teachers' perceptions of pupil progress?

Teacher ratings were returned for 312 experimental pupils and 236 control pupils. Observations about the functioning level in reading of the groups were considered important to assessing progress. Teachers were requested to rank pupils in relation to other children in their classes using a five-point continuum in answer to the guideline: From your knowledge of this pupil's

work in your classroom, how would you rank this child's
over-all reading performance in relation to the other children
in your class. (Visualize your class as being divided into fifths.)
 Results indicate slight differences between the overall ratings of
 each group. Largest difference occurred at the lowest level (14.0
 per cent vs. 22.0 per cent.) Results from the teachers' ratings
 showed:

<u>Group</u>	<u>Low Fifth</u>	<u>Second Lowest Fifth</u>	<u>Middle Fifth</u>	<u>Second Highest Fifth</u>	<u>Top Fifth</u>
Experimental	14.0%	23.0%	43.0%	20.0%	8.0%
Control	22.0%	21.0%	34.0%	14.0%	8.0%

Teachers were also requested to answer the question:

In your opinion, can this child handle the usual reading
materials used in his grade?

Differences between the categories assigned on a five-point continuum were evident at the two categories "most of the time" 40.89 per cent and 33.07 per cent and "sometimes" 35.78 per cent and 37.01 per cent. Summaries* of each group's ratings included the following:

<u>Group</u>	<u>Always</u>	<u>Most of the time</u>	<u>Sometimes</u>	<u>Rarely</u>	<u>Not at All</u>
Experimental	9.58%	40.89%	35.78%	9.90%	3.83%
Control	8.27%	33.07%	37.01%	14.17%	7.48%

A copy of the Pupil Rating Scale for experimental and control pupils is contained in Appendix V. Teachers viewed the strengths of the program as providing change from the usual class-

*Duplicate

room routine and the creation of a new interest in school.

Parents' Perceptions of Progress

The Reading Improvement Program sought to improve parental ability in supporting children's efforts to read. Questionnaires were distributed to 321 parents of experimental pupils participating in the program. A total of 129 replies was received.

Approximately 80 per cent of the respondents viewed the program as helping their child "very much". Percentages of response to the question: Has the program helped your child were distributed as follows:

<u>Very Much</u>	<u>Some</u>	<u>Very Little</u>	<u>Not at all</u>
80%	13.9%	6.1%	0.0%

Parents viewed the program as "best for the child's future", very helpful" and encouraged its continuation. This is indicative that the program further advanced suggestions from previous surveys. Suggestions from this year's survey include:

- . more reading time in school
- . more reading teachers
- . continue to involve parents in training
- . more thorough screening of pupils before selection
- . expansion to grades beyond first through third
- . home reading assignments for children

Approximately 85 per cent of the parent sample reported that they observed their children reading more books at home.

An idea of the extent of parent consultant interaction can be gleaned from the questionnaire data which indicated that 68 per cent of parents stated that they had observed their child in reading activities at school. This may be compared with a 75% positive response on the 1968 questionnaire, and 78% in 1970. Not more than five per cent of parents in the sample group reported home visits by reading consultants. This represents a decrease in home visitations by consultants possibly due in part to increased length of instructional periods for program participants within the school day.

The same pattern for informing parents that their children were being served in the program emerged in the 1972 questionnaire as in the 1971 instrument. Parents of 58 pupils indicated that they first learned about the Reading Improvement Program from their child; 50 stated they received a letter informing them of their child's participation; 39 noted that the consultant had phoned them about the program. These data compared proportionately with totals of 35, 29 and 23 respectively in the 1971 survey.

A copy of the parent's questionnaire is contained in
Appendix VII.

Follow-Up of Experimental and Control Pupils

The final question of interest to the evaluation in-
volved:

How does the current progress of pupils who received
service in 1969-71 compare with those who did not
receive service?

The following groups were involved:

1. 1970-71 experimental and control third graders
enrolled in grade 4 as of September, 1971;
2. 1968-69 experimental and control third graders
enrolled in grade 6 as of September, 1971;
3. 1969-70 experimental and control second graders
enrolled in grade 5 as of September, 1971.

Follow-up of pupils served in grade 3 (experimental)
and those not served (control) during the 1970-71 school year
involved observation of their standings based on performance scores
from sub-tests of the Stanford Diagnostic Reading Test (Level I)
which was administered as part of the city-wide testing program in
September, 1971. Scores for a sample of 23 control pupils and 68
experimental pupils were located.

STANFORD DIAGNOSTIC AVERAGE RAW SCORES Level I Grade 4

1971				
Sub-Tests	Exp.	Control	t-ratio	Decision
Comprehension	30.13	28.61	.7969	n.s.**
Vocabulary	17.65	17.87	.1765	n.s.
Auditory Dis- crimination	26.06	25.21	.3424	n.s.
Syllabication	11.93	10.87	1.0399	n.s.
Beginning and Ending Sounds	24.06	22.78	.9778	n.s.
Blending	21.09	19.97	.4951	n.s.
Sound Recognition	15.85	15.35	.3773	n.s.

* significant

**not significant

$$\alpha = p \geq .05 = 2.000 \text{ 89d.f.}$$

Post score standings of this sample of pupils in the Gates MacGinitie Reading Tests in June, 1971 reflected superior reading performance for experimental pupils. The t-ratio of 2.802 was significant at $p < .05$ (2.000).

In September of 1971, the standings of experimental groups mirrored an advantage over controls on the Stanford Diagnostic Test, Level I. The advantage was not significant. It may be interpreted from study of the report of Stanford Diagnostic Raw Scores that the directions of weaknesses of both experimental and control pupils lay mainly in the areas of sound recognition and syllabication. Data in the 1970-71 evaluation showed an advantage in vocabulary for the experimental group. In the 1971-72 study advantages were evident for experimental pupils in comprehension, auditory discrimination, beginning and ending sounds and blending. No significant differences were obtained in the comparisons of control and experimental pupils on sub-tests of the Stanford Diagnostic Test administered at the beginning of grade 4.

Scores for experimental and control third graders who had participated in the 1968-69 program and were in grade six as of September, 1971 were obtained from project records. High mobility rates throughout schools reduced the population of these experimental and control pupils remaining in their original schools to 147. Scores for this group of pupils were drawn from project records of the posttest administration of the 1968-69 reading tests. Using the table of critical values of $t_{\alpha} = p \geq 1.980$, it was determined that

no significant difference was apparent at the time of testing for the two groups on the Gates MacGinitie Reading Test at that point in time. Examination of the mean scores for each group revealed a grade equivalent average in comprehension of 3.0 vs 3.1, experimental-control, stanine 5. Performance levels from the Comprehensive Tests of Basic Skills, Level 2 administered in February, 1972 revealed no significant differences between the two samples. Grade equivalent averages were 4.3 vs 4.1, stanine 3-4. In 1970, these pupils were .9 to .8 grade equivalent units below the norm as established for the Gates MacGinitie Reading Tests, Primary C. Pupil performance standings at sixth grade level (1972) placed this sample group at stanine 3-4 the Comprehensive Tests of Basic Skills in comprehension and 2.6 to 2.5 grade equivalent units below the norm. It may be interpreted that without continued support within the classroom, this sample of pupils will continue the regression trend which was evident in this study as they move through the higher grades.

The summary of results is shown as follows:

Year	Test	Grade	Average Raw Score Means		Average Grade Equiv.	Average Stanine	t-ratio	Decision*
1968-69	Gates MacGinitie Reading Test Primary C	3	22.54	E	3.0	5	1.4525	n.s.
			24.33	C	3.1	5		
1971-72	Comprehensive Test of Basic Skills, Level 2 Grade Equivalent	6	23.04	E	4.3	3	.6946	n.s.
			22.16	C	4.1	3		
N = 147			$\alpha p.05 \geq 1.980$				df = 145	
*S - significant		n.s. - not significant			E - Experimental		C - Control	

Evidence of the impact of continued support for pupils was revealed in a study of second grade participants in 1970-71 Reading Improvement Program who participated in the administration of the Comprehensive Test of Basic Skills administered in November, 1971. These pupils were third graders in the 1971-72 school year and were receiving the services of the reading consultant in their schools. The sample included 62 experimental and 28 controls. The t-ratio based upon scores from the Gates MacGinitie Primary B testing reflected no significant differences between the reading performances of experimental and control pupils at the end of the second grade (1970-71). Results from the Comprehensive Test of Basic Skills, Level 1 administered at third grade level, March, 1972 for this sample group showed control pupils achieving an advantage over experimentals without achieving significance of difference on this instrument. Both groups placed in the fifth stanine which may be interpreted as average performance. Score data included:

Test	Grade		Average Raw Score Mean	Average Grade Equiv.	Stanine	t-ratio	Decision*
Gates MacGinitie Reading Test, Primary B	2	E	18.71	2.5	4	1.3504	n.s.
		C	16.93	2.3	3		
Comprehensive Test of Basic Skills	3	E	19.87	2.9	4	1.8091	n.s.
		C	22.71	3.1	4		
N - 90			$\alpha p. \sum 05 = 2.000$			df = 88	
*S - significant		n.s. - not significant		E - Experimental		C - Control	

Examination of the findings reveal average test scores for experimental pupils in this sample were in stanine four on the second grade Primary B, Gates MacGinitie and the third grade Comprehensive Test of Basic Skills. Control pupils of this sample who placed in stanine three increased their standings on the Comprehensive Test of Basic Skills to stanine four. Both groups were below stanine five at the two points in time.

The third longitudinal study was concerned with the diagnosed reading strengths and weaknesses of 1969-70 third grade pupils who were in the fifth grades of their home schools in 1971-1972. The sample included 57 experimental pupils and 45 controls. In June, 1970, scores from the Gates MacGinitie pupils in this sample showed a .6 grade equivalent advantage for experimental pupils over their controls in vocabulary and a .5 grade equivalent advantage in comprehension. Results from the Stanford Diagnostic Test, Level II administered in September, 1971 to fifth grade pupils reflected no significant differences between the groups in vocabulary or comprehension. It was noted that the experimental pupils demonstrated a performance advantage in comprehension on this test, 3.4 to 3.2.

Results are recorded for observation.

STANFORD DIAGNOSTIC AVERAGE RAW SCORES

Level II

Grade 5 1971

Sub-Tests	Exp.	Stanine	Con.	Stanine	t-ratio	Decision*
Comprehension	21.84	1.98	19.47	1.60	1.5900	n.s.
Vocabulary	20.61	2.49	20.07	2.42	.5559	n.s.
Syllabication	13.35	2.84	12.64	2.57	.8781	n.s.
Sound Discrimination	17.46	2.58	15.36	2.22	1.6119	n.s.
Blending	12.33	2.66	13.07	2.73	.4788	n.s.
Reading Rate	14.18	2.89	18.16	4.02	2.000	s.
N - 102		p. .05=2.000			df=100	

*S-significant n.s.-not significant Exp.-Experimental Con.-Control

Correct interpretation of significant difference which appeared in reading rate requires comparison of the reading rate stanine with stanine placements in other sub-tests. A group median stanine difference of one-half stanine between rate and any subtest result is generally considered significant.²

Examination of the charts shows a significant difference between reading rate and comprehension for experimental pupils in the fifth grade sample and minor differences in subtests of syllabication, sound discrimination and blending. Major significant differences were illustrated for control pupils between reading rate and all subtests according to the formula outlined in the rate interpretation

²Stanford Diagnostic Reading Test, Level II. Manual for Administering and Interpreting. Harcourt Brace & World, Inc. 1966, pg. 19.

section of the Stanford Achievement manual. It may be interpreted that:

- . the trend of regressive direction of reading deficiencies was evident at fifth grade level for experimental and control pupils who were identified as in need of remediation procedures in the earlier grades
- . reading needs of identified control pupils who did not receive the assistance from the project were more severe

V. CONCLUSIONS AND RECOMMENDATIONS

A. Discussion of Results

Evaluation of this project involved a randomly selected sample of 548 pupils (312 experimental and 236 controls). The nature of program design necessitates identification of a total population of primary pupils with reading needs. Random selection of pupils for consultant groups within each primary grades permits each pupil an equal opportunity to be chosen for service. Pupils not so selected are placed on a waiting list and may replace transferees or other selectees who withdraw from the school system.

Analysis of the data showed that experimental pupils performed significantly higher than control pupils on tests of vocabulary and comprehension. No significant differences in performances were found between boys and girls at grades one, two or three. Advantages in performances accrued to girls of the experimental groups of grades two and three.

The greatest impact of the program was observed at grade three where comprehension performance and use of classroom materials were at the highest level for experimental pupils.

Classroom teachers rated two out of five experimental pupils, as being able to handle the usual reading materials for the grade level "most of the time". It was determined that use of classroom materials by pupils was highly correlated with the marks teachers assigned to pupils.

Teachers valued increased confidence, better self-image, greater opportunities for attention to individual pupil reading needs and improved word attack skills. Parents of these same pupils valued individual attention to reading problems and observed an increased desire to read and enthusiasm in displaying oral reading skills at home.

Longitudinal studies of the performances of participants in prior years revealed limited differences in the reading performances of experimental and control pupils in the fourth, fifth and sixth grades. A pattern of regression in reading performances increased in the later grades accompanied with loss in stanine placements on city-wide tests administered to all pupils.

Weaknesses in syllabication and sound recognition were observed for the third grade sample at the time of the administration of the Stanford Diagnostic Tests, Level I in September, 1971, for fourth grade pupils. Results from the administration of the Stanford Diagnostic Tests, Level II, in September, 1972 presented a different trend of performance. Experimental pupils demonstrated low performance on comprehension skills, but had minor differences in vocabulary, syllabication, sound discrimination and blending when compared with their reading rate. Control pupils showed significant negative differences between all sub-test results and their reading rates. The inability of these pupils to cope with their reading deficiencies may have contributed to a regression to stanine three standings in the city-wide administration of the Comprehensive Test of Basic Skills at sixth grade level.

B. Recommendations

Recommendations based upon evaluation data findings, parent opinions, and teacher interviews are presented. The recommendations suggest:

- . continuation of the Reading Improvement Project
- . review of criteria for selection of first grade pupils
- . extension of the program concept into the fourth grade
- . greater emphasis on reading comprehension
- . increased communication between the project and teachers of pupils being served
- . continued efforts to involve parents in support of their children's efforts at improving reading
- . implementation of program geared toward the readings needs of fourth grade pupils utilizing the experiential learnings and skills derived from the Reading Improvement Program for primary pupils.

APPENDIX

APPENDIX I
 Number of Pupils Served
 1971-1972*
 Experimental
 READING IMPROVEMENT PROGRAM
 June, 1972*

<u>School</u>	<u>Grades</u>			<u>Total</u>
	1	2	3	
1. Bolton	20	10	10	40
2. Chesterfield	20	19	12	51
3. Columbia	0	23	32	55
4. Daniel E. Morgan	12	13	32	57
5. Dunham	10	21	21	52
6. Giddings	11	18	21	50
7. Hazeldell	20	10	6	36
8. Hough	0	24	32	56
9. John Burroughs	23	10	13	46
10. John D. Rockefeller	9	19	21	49
11. John W. Raper	9	12	33	54
12. Joseph Landis	0	28	20	48
13. Longwood	0	21	30	51
14. Louis Pasteur	11	10	30	51
15. Margaret A. Ireland	10	20	20	50
16. Mary B. Martin	0	21	32	53
17. Marion	10	10	10	30
18. Miles Standish	0	20	20	40
19. Oliver W. Holmes	10	21	21	52

APPENDIX I (Con't)

READING IMPROVEMENT PROGRAM June, 1972*

20. Quincy	21	10	21	52
21. Rosedale	11	37	10	58
22. Sowinski	Consultant Resigned			
23. Stanard	21	12	21	54
24. Tremont	10	32	10	52
25. Wade Park	10	26	19	55
26. Washington Irving	21	0	31	52
Added during 1972				
27. Parkwood	12	16	22	50
28. Gordon	17	14	19	50
29. East Madison	21	10	19	50
30. Captain Arthur Roth	21	7	22	50
31. Woodland Hills	10	21	19	50
Non-public				
32. St. Agatha	0	0	9	9
33. St. Agnes	9	10	10	29
34. St. Joseph Franciscan	0	10	11	21
35. St. Michael	0	9	10	19
36. St. Vitus	13	14	0	27
37. Mt. Carmel	7	5	9	21
38. Urban Community	0	11	0	11
	379	574	678	1631

*Population based on June, 1972 census. Mobility rate within the project (transfers to non-project schools and withdrawals) 25 per cent. In addition, 350 identified pupils remained on the waiting list.

APPENDIX II
SUMMARY OF COMPARISONS
Experimental--Control

<u>Variable</u>	<u>Least Square Estimates</u>	<u>F-ratio</u>	<u>Probability Level</u>
Vocabulary	8.3603	130.9144	.0001
Comprehension	4.5642	63.5089	.0001
Participation	.0116	.4524	.5015
Completion	.0670	2.2782	.1318
Confidence	.1541	6.0229	.0145
Independence	.0732	1.7451	.1871
Attitude	.0528	.0661	.7973
Classroom			
Materials	.1804	6.9197	.0088
Mark	.0759	1.0268	.3114
Attendance	7.5129	7.3458	.0070

F-ratio for Multivariate Test of Analysis of Covariance = 17.0733
D.F. = 10 and 527 P less than .0001.

APPENDIX II-a

SUMMARY OF COMPARISONS

Grade 1 - Grade 3

Grade 2 - Grade 3

Variable	Least Square Estimates		F-ratios		Probability Level	
	Gr. 1-3	Gr. 2-3	Gr. 1-3	Gr. 2-3	Gr. 1-3	Gr. 2-3
Vocabulary ²	-1.3894	1.3077	3.3249	2.9140	.0688	.0884
Comprehension ²	-5.9181	-3.6252	32.6766	28.7781	.0001	.0001
Participation	.0724	.0642	.1014	1.3073	.7503	.2534
Completion	.0794	.0507	.0754	.4785	.7838	.4894
Confidence	.1061	.0306	1.6071	.3144	.2055	.5753
Independence	- .0113	.0795	.3035	1.8486	.5819	.1746
Attitude	.1187	.0475	2.5143	.4269	.1135	.5138
Classroom						
Materials	.1093	.2991	1.4700	10.3496	.2259	.0014
Mark	- .2321	- .1575	4.2697	3.4773	.0393	.0628
Attendance	2.6141	-4.5900	.2920	.6759	.5892	.4114

F-ratios for Multivariate Test of Analysis of Covariance = 4.7621 and 11.8912 respectively; DF = 10 and 527 P less than .0001

APPENDIX III
Pupils at Various Performance Levels Compared with
Reading Expectancies *
Grade 2

School	Vocabulary										Per Cent at Criterion Level	
	-2.1 & below	-2.0-1.0	-1.5-1.1	-1.0 - .6	-.5 - -.1	±.0	+.1 - .5	+.6 - 1.0	+1.1 - 1.5	+1.6-2.0	Pre	Post
1 PRE		2	2	1								
1 POST			1	2	2						0%	40%
2 PRE	2	1	3		1							
2 POST	2		2								0%	35½%
3 PRE		1			2							
3 POST		1				1				1	66⅔%	66⅔%
4 PRE		1	3		2				4	2	0%	100%
4 POST												
5 PRE	1					1		1*				
5 POST	1										83%	83%
6 PRE		1	2	2	1	1			1	1	100%	50%
6 POST			1	2					1			
7 PRE		1	2								0%	0%
7 POST	1	2										
8 PRE			1	1	4			2			66⅔%	33⅓%
8 POST			1	3								
9 PRE	1		1	2					1		0%	75%
9 POST	1											
10 PRE				4							0%	75%
10 POST				1	1			1				
11 PRE		1	2	1	2						33⅓%	50%
11 POST				3	1			2				
12 PRE	1		3	2	1			1	1	3	14%	86%
12 POST		1			1							
13 PRE		1	1	2	2							
13 POST		2			1	1	2				33⅓%	66⅔%

APPENDIX III (Con't)
Pupils at Various Performance Levels Compared with
Reading Expectancies *
Grade 3
Vocabulary

School	Grade 3 Vocabulary										Per Cent at Criterion Level	
	-2.1 & below	-2.0-1.6	-1.5-1.1	-1.0 - .6	- .5 - .1	0	+ .1 - .5	+ .6 - 1.0	+1.1 -1.5	+1.6-2.0	Pre/Post	
14 PRE		1	1	1	1		2		1		25%/75%	
14 POST			1									
15 PRE	1		1	1	1		1				33 1/3%/66 2/3%	
15 POST												
16 PRE			2	2		1	1	2			0%/100%	
16 POST												
17 PRE			4	2		1	1	2			14%/45%	
17 POST		2	1	1								
18 PRE	2	1	3	2		1		1			0%/38%	
18 POST			3	2	1	1						
19 PRE		3					1				25%/25%	
19 POST		1	2				1					
20 PRE		1	1	1	1	1	2			1	25%/100%	
20 POST												
21 PRE	1		3	1	2		1	2	2	1	37 1/2%/88%	
21 POST			1				2					
22 PRE		1			1					1	66 %/66 %	
22 POST			1		2							
23 PRE		1	5	2			1		1		0%/50%	
23 POST	1		2	1	2							
	20/10	25/14	48/23	25/20	16/15	1/3	4/20	9/16	1/11	1/14		
											TOTAL AVERAGE	17%/60%
											TOTAL PUPILS	16/36

*Relates to pupils in Grade 3, 1971-1972 sample.

APPENDIX III (Con't)
Pupils at Various Performance Levels Compared with
Reading Expectancies *
Grade 3
Vocabulary

School	-2.1 & below	-2.0-1.6	-1.5-1.1	-1.0 - .6	-.5 - .1	0	+.1 - .5	+.6 - 1.0	+1.1 - 1.5	+1.6-2.0	Per Cent at Criterion Level Pre/Post
1 PRE	1	2	2								
1 POST	1		1	1	1				1		0%/40%
2 PRE	3										
2 POST	3										0%/0%
3 PRE											
3 POST		3	1	3	1		2	1	2	2	12 1/2%/87 1/2%
4 PRE	2	5	4		1						
4 POST	3	2	4	2			1				8%/8%
5 PRE	1	2	1		2						
5 POST			1						1	4	33 1/3%/83 1/3%
6 PRE		1	2	2	1						
6 POST		1	1	2				1	1		16 1/3%/33 1/3%
7 PRE	2	1	3		1		1	2		1	0%/83 1/3%
7 POST	1										
8 PRE	1	1	3	1	2		1				
8 POST			1		1		2	1	2	2	55 1/3%/89%
9 PRE	1		2		3						0%/100%
9 POST											
10 PRE		2	3	1							
10 POST		1	1	3				1			0%/16 1/3%
11 PRE	2		5	1							
11 POST	1	3		3	1						0%/12 1/2%
12 PRE	2	1	3	1	2						
12 POST				1			2	2	1	3	22%/39%
13 PRE	1		1	3	2						
13 POST		1	2	2	1		1	1			37 1/2%/57 1/2%

APPENDIX III (Con't)
Pupils at Various Performance Levels Compared with
Reading Expectancies *
Grade 2
Vocabulary

[illegible]

*Relates to pupils in Grade 2, 1971-1972 sample.

APPENDIX IV (Con't)
Pupils at Various Performance Levels Compared with
Reading Expectancies *

Grade 2
Comprehension

Per Cent at
Criterion Level
Pre/Post

+1.6-2.0

+1.1 -1.5

+1.0 -1.1

+0.5 -0.1

-0.5 -1.1

-1.0 -1.6

-1.5-1.1

-2.0-1.6

-2.1 & below

School

PRE
1 POST

PRE
2 POST

PRE
3 POST

PRE
4 POST

PRE
5 POST

PRE
6 POST

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7 POST

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8 POST

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9 POST

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10 POST

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11 POST

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12 POST

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13 POST

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APPENDIX IV (Con't)
Pupils at Various Performance Levels Compared with
Reading Expectancies *

School	Grade 3 Comprehension										* +1.6±2.0	Per Cent at Criterion Lev. Pre/Post
	-2.1 & below	-2.0-1.6	-1.5-1.1	-1.0 - .6	-.5 - .1	±0	+1.1 ±.5	+1.6 ±.5	+1.1 ±1.5	+1.6±2.0		
14 PRE		1	2	1			2	1				0%/75%
14 POST				1								
15 PRE			2	1								0%/0%
15 POST	1	1	1									
16 PRE		1	1	2								0%/100%
16 POST					1		1	1	1			
17 PRE			4	3								0%/25%
17 POST	1		2	2	1	1						
18 PRE		2	3	3								0%/25%
18 POST		2	1	3	1			1				
19 PRE	1	1	1		1							25%/25%
19 POST		1	2				1					
20 PRE			2	2								0%/75%
20 POST			1				2	1				
21 PRE	2		1	2	3							37%/75%
21 POST		1		1	2		2	1		1		
22 PRE		1			1							66%/66%
22 POST	1						1			1		
23 PRE	2	2	2	2	2							0%/38%
23 POST	2		3					1				
	26/17	26/22	47/28	30/20	11/13	1/7	0/19	0/9	0/5	1/2		

TOTAL AVERAGE* 18%/33%

TOTAL PUPILS* 26/51

*Relates to pupils in Grade 3, 1971-1972 sample.

APPENDIX IV (Con't)
Pupils at Various Performance Levels Compared with
Reading Expectancies *

School		Grade 5 Comprehension										Per Cent at Criteria Level:	
		-2.1 & below	-2.0-1.6	-1.5-1.1	-1.0 - .6	-.5 -.1	± 0	+1.1 - +.5	+1.6 - +2.0	+1.1 - +1.5	+1.6 ± 2.0	Pre	Post
1	PRE POST	3 1	1 1	1 1	1			1				0%/20%	
2	PRE POST	2 2	1		1							0%/0%	
3	PRE POST		1	6 1	2	1 1	2	1	1			12%/62%	
4	PRE POST	7 3	4	3 3	2 1		1					0%/83%	
5	PRE POST	3 1	1	2 1	1 2			1				16%/16%	
6	PRE POST		1	4 2	2			1	1	1		0%/50%	
7	PRE POST	2 2	1 1	3 2			1					0%/16%	
8	PRE POST	2 1	2 1	1 1	3 1	1 1	1	3				11%/56%	
9	PRE POST	1		1 1	1 1	1						0%/25%	
10	PRE POST		4 2	1 2	1 1	1						0%/16%	
11	PRE POST	1	3 2	3 3	1 1	2						0%/25%	
12	PRE POST	1	3 2	2	3	1 1	1 1	2	1	1		11%/66%	
13	PRE POST	1	3 1		1 1	4 1		1		2		50%/50%	

APPENDIX IV (Con't)
Pupils at Various Performance Levels Compared with
Reading Expectancies
Grade 2
Comprehension

Per Cent at
Criterion Level
Pre/Post

School	-2.1 & below	-2.0-1.6	-1.5-1.1	-1.0 - .6	-.5 - .1	0	+ .1 - .5	+ .6 - 1.0	+1.1-1.5	+1.6-2.0	
14 PRE								2			0%/100%
14 POST			2								
15 PRE			1	1	1						33 1/3%/0%
15 POST		2	1	1							
16 PRE		2	3	5	2			2			20%/80%
16 POST		2			5	1					
17 PRE				2	4		1				66 2/3%/16 2/3%
17 POST			2	3							
18 PRE	1	1	2	2				1			0%/16 2/3%
18 POST	2	1	2								
19 PRE			2		1					1	33 1/3%/33 1/3%
19 POST			1	1							
20 PRE		1	4	4			1	2			0%/33 1/3%
20 POST		2	2	2							
21 PRE			1		1			2	1		66 2/3%/100%
21 POST											
22 PRE				2	2						50%/50%
22 POST				2							
23 PRE				1	4			2			80%/100%
23 POST					1	1	1				
	4/7	17/14	32/18	30/21	29/18	2/5	1/11	0/16	0/5	0/2	
											TOTAL AVERAGE 50%/48%
											TOTAL PUPILS 66/110

*Relates to pupils in Grade 2, 1971-1972 sample.

APPENDIX V

School _____

Check One:

Experimental ☐

Control ☐

Project Reach ☐

Reading Improvement ☐

Talking Typewriter ☐

Pupil Rating Sheet Reading Instruction Program - 1972

_____ has been receiving services of the Reading Instruction Program. We are interested in securing from you, his classroom teacher, ratings and pertinent information about his reading performance. Please complete, check and return the completed form in the enclosed envelope sealed to the consultant in your building. All sealed envelopes are to be returned to the Division of Research and Development, attention Juanita Logan, room 610, no later than June 12, 1972.

1. Indicate latest scholastic aptitude test result.

* MR _____ PLR _____ IQ _____

Test _____

2. Child's birthdate _____ Age 6/72
Month Day Year

3. Present grade level _____ In September _____.

4. Child's annual attendance (add both semesters). _____

5. Reading mark assigned _____.

*Metropolitan Reading Readiness Test - Letter Rating

6. Use child's reading card:

How many reading steps did the child complete in 1970-71? _____

How many steps did the child complete in 1971-72?

7. In your opinion can this child handle the usual reading material for his grade level? (Disregard numbers. Check the box only.)

☐ Always ☐ Most of the time ☐ Sometimes
5 4 3

☐ Rarely ☐ Not at all
2 1

8. In general, have you noted any degree of improvement in:

	<u>Not At All</u>	<u>Some</u>	<u>Very Much</u>	<u>Doesn't Apply</u>
a. Pupil participation in group work	_____	_____	_____	_____
b. Completion of reading assignments	_____	_____	_____	_____
c. Pupil confidence in his ability to read	_____	_____	_____	_____
d. Pupil independence in reading study skills	_____	_____	_____	_____
e. Pupil's general attitude toward school	_____	_____	_____	_____

11. From your knowledge of this pupil's work in your classroom, how would you rank this child's reading performance as described below in relation to the other children in your class. (Visualize your class as being divided into fifths.)

Number of pupils in class

(Please check)	Rank in Class				
	Lowest 1/5	Second Lowest 1/5	Middle 1/5	Second Highest 1/5	Top 1/5
a. recognizing consonant sounds					
b. recognizing vowel sounds					
c. identifying sight words for grade level					
d. pronouncing words at grade level					
e. reading orally without undue frustration					
f. finding main ideas					
g. following sequence					
h. getting meaning of words from context					
i. recognizing directly stated details					
j. drawing conclusions from facts or statements					
k. participating in reading group					
l. completing written assignments					

APPENDIX VI

CLEVELAND PUBLIC SCHOOLS
Reading Improvement Program

June 4, 1972

Dear Parent:

We are contacting parents who have youngsters who have been participating in the Reading Improvement Program here at _____ School.

Would you please help us by telling us what you think about this program?

1. Do you have a son or daughter in this program? Son 45% Daughter 55%

2. In what grade is your youngster? I II III No reply
12% 41% 39% 8%

3. Has the program helped your child?

0.0% Not at all 0.1% Very little 13.0% Some 86.0% Very much

4. What does your child say about the program?

5. Have you noticed that your child reads more books at home? 85% Yes 15% No

6. Have you noticed that your child takes more books from the library?

70% Yes 30% No

7. How did you find out your child was in this program?

38% Letter 44% Child said

30% Teacher called 0% Other

8. What's the best thing about the program?

9. Has the program helped you to help your child in reading? 85% Yes 12% No

If yes, how?

No Reply 4%

*Duplicated count

10. Do you feel the program should be continued? 96% Yes 1% No Reply 3% ^{No}

11. What changes should be made in the program?

12. Have you visited the school? 68% Yes 32% No

13. Has the Reading Consultant visited your home? 5% Yes 95% No

Please return this form in the sealed envelop to your child's teacher who will return it to Mrs. Juanita Logan, Room 610, Division of Research and Development.

Thank you,

Pauline S. Davis
Educational Program Manager
Reading Instruction Program

APPENDIX VII

1970-1971 READING IMPROVEMENT PROJ GRADES 1,2,3, 4,5 X GRADE X TRIEST MULTIVARIATE ANALYSIS OF COX DESIGN LOCAL, FLORIDA

PAGE 9

SAMPLE CORRELATION MATRIX

	1	2	3	4	5	6	7	8	9	10
	CHRG	PLR	VOCAR2	COMPR2	ATTNDC	PART	COMPL	CONFID	INDPCE	ATTUDE
1	CHRG	1.000000								
2	PLR	.33705	1.000000							
3	VOCAR2	-.093662	.320505	1.000000						
4	COMPR2	-.079522	.283479	.592604	1.000000					
5	ATTNDC	-.001169	-.083429	-.021483	1.000000					
6	PART	-.009295	.004202	.185018	.020868	1.000000				
7	COMPL	-.045800	.050266	.218661	.013931	.552737	1.000000			
8	CONFID	-.053835	.043944	.291916	-.052697	.505690	.528976	1.000000		
9	INDPCE	-.012769	.136320	.328635	-.008876	.557915	.582314	.615735	1.000000	
10	ATTUDE	-.016029	-.002120	.125584	-.002444	.318134	.537233	.483134	.484911	1.000000
11	CLMATR	-.145739	.338391	.545091	.014287	.304341	.304341	.302149	.512600	.263245
12	TMARK	-.042691	.172159	.270407	-.016186	.177597	.261277	.195042	.273167	.177896
13	VOCAB4	-.074807	.270186	.899587	-.036063	.157533	.158330	.207481	.239265	.070588
14	COMPR4	-.062971	.279410	.555244	-.027215	.205069	.163590	.168246	.304796	.114296

	11	12	13	14
	CLMATR	TMARK	VOCAB4	COMPR4

11	CLMATR	1.000000		
12	TMARK	.445014	1.000000	
13	VOCAB4	.404638	.191734	1.000000
14	COMPR4	.501070	.208674	.576013

STANDARD DEVIATION

VARIABLE	VARIANCE	STANDARD DEVIATION
1 CHRG	49.362744	7.0259
2 PLR	129.117560	11.3630
3 VOCAR2	69.971327	8.3649
4 COMPR2	46.973951	6.8537
5 ATNDC	1920.622700	43.8249
6 PART	.519928	.7210
7 COMPL	.619011	.7863
8 CONFID	.663600	.7459
9 INDPCF	.455752	.6751
10 ATTUDE	.709463	.8417
11 CLMATP	.902043	.9498
12 TMRK	.927435	.9630